RADical Tools

Presented by
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Naval Facilities Engineering Command (NAVFAC) LANT

Objectives - RADical Tools

Sharing Info to Help RPMs With Upcoming RAD Projects

- Tools developed related to Historical Radiological Assessments (HRA)
  - Standard Operating Procedure (SOP)
  - Notification Protocol during HRA process
  - Consistency when characterizing Areas of Interest (AOIs)
  - Post-HRA Identification of Responsible Program
  - Post-HRA Process adding new ER,N sites into NORM
  - RASO Environmental Protection Managers (EPM) SOP
  - Work Plans & Sampling and Analysis Plan Tools
  - PA/SI Scope of Work Templates

[Ref: Oak Ridge Associated Universities, May 2011. Sealed Radioactive Source]

Objectives - RADical Tools

Sharing Info to Help RPMs With Upcoming RAD Projects

- Radiological Workgroup (RAD WG) Tools
  - HRA Post-Indoctrination Guidance
  - Work Plans and Sampling and Analysis Plan (SAP) Tools
  - Focused Sub-Groups:
    - ✓ Quality Assurance (QA) Oversight for Scoping Surveys in the Field
    - ✓ Conceptual Site Model (CSM) & Background Study
    - ✓ PA/SI SOW Templates
    - ✓ Workplan/SAP Tools
    - ✓ Radiological ARARs
    - ✓ Post HRA Comm Plans

BACKGROUND - What is G-RAM?

General Radiological Material (G-RAM)

- Department of the Navy (DON) radioactive materials *excluding* Naval Nuclear Propulsion Program or Naval Nuclear Weapons Program

- Includes naturally occurring radioactive material (NORM), technologically enhanced naturally occurring radioactive material (TENORM), and naturally occurring or accelerator produced radioactive material (NARM)

- **Commodities typically found at bases**
  - Luminescent Dials and Gauges
  - Luminescent Radium Paint
  - Personnel markers
  - Electron Tubes
  - Ship markers
  - Switches
  - Depleted uranium from aircraft
  - Welding rods
  - Condition is often rough and degraded

Deck Markers and Personnel Markers

Aircraft Parts

BACKGROUND - HRA

Purpose of Historical Radiological Assessment

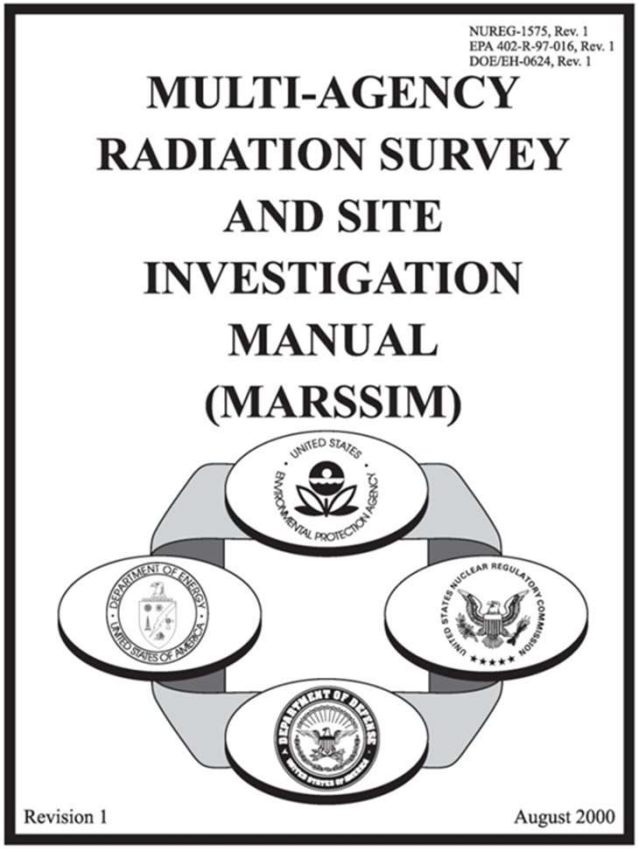
- Describes use of G-RAM at an Installation both historical and current
- Identify radiologically Areas of Interest (AOI)

Similar to a CERCLA Preliminary Assessment

- Level of detail and type of information similar
- Not a Primary Document under CERCLA

HRA compiled from:

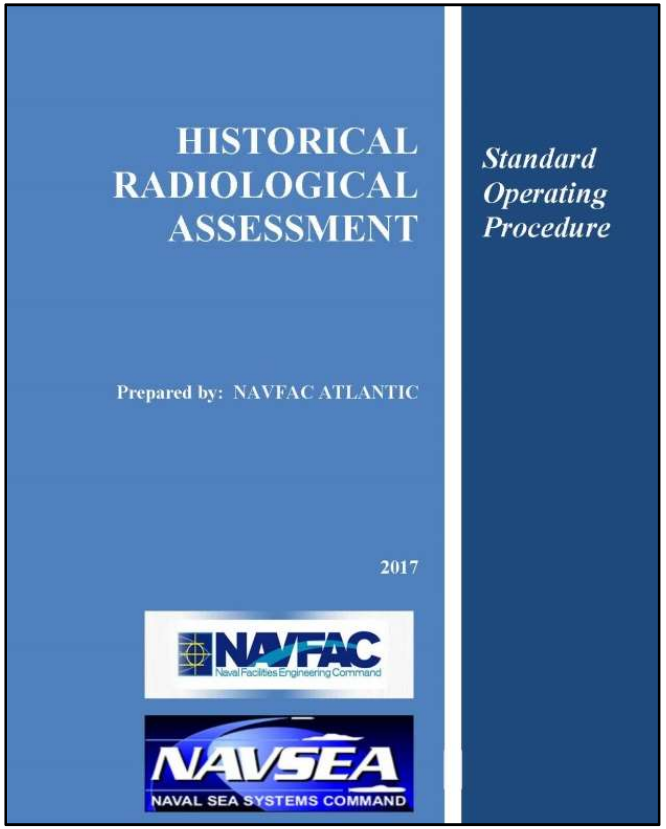
- Desktop review of historical and current data
- Site visit and windshield tours
- Meetings and discussions with staff
- Repository searches for historical documents
- Interviews with retirees and personnel



RADical Tools

Standard Operating Procedure (SOP) for HRAs

- Developed by LANT for HRAs using CLEAN contract
- Documents process starting with contracting to final report
- Documents consistencies to ensure better report
- Increased communication tools during the development of HRA
  - Webinar
  - In-Brief & Quad Charts
  - Outreach Package
  - Fact Sheets
  - Letter Templates
  - Meeting Templates



RADical Tools

Standard Operating Procedure (SOP) for HRAs – Consistency

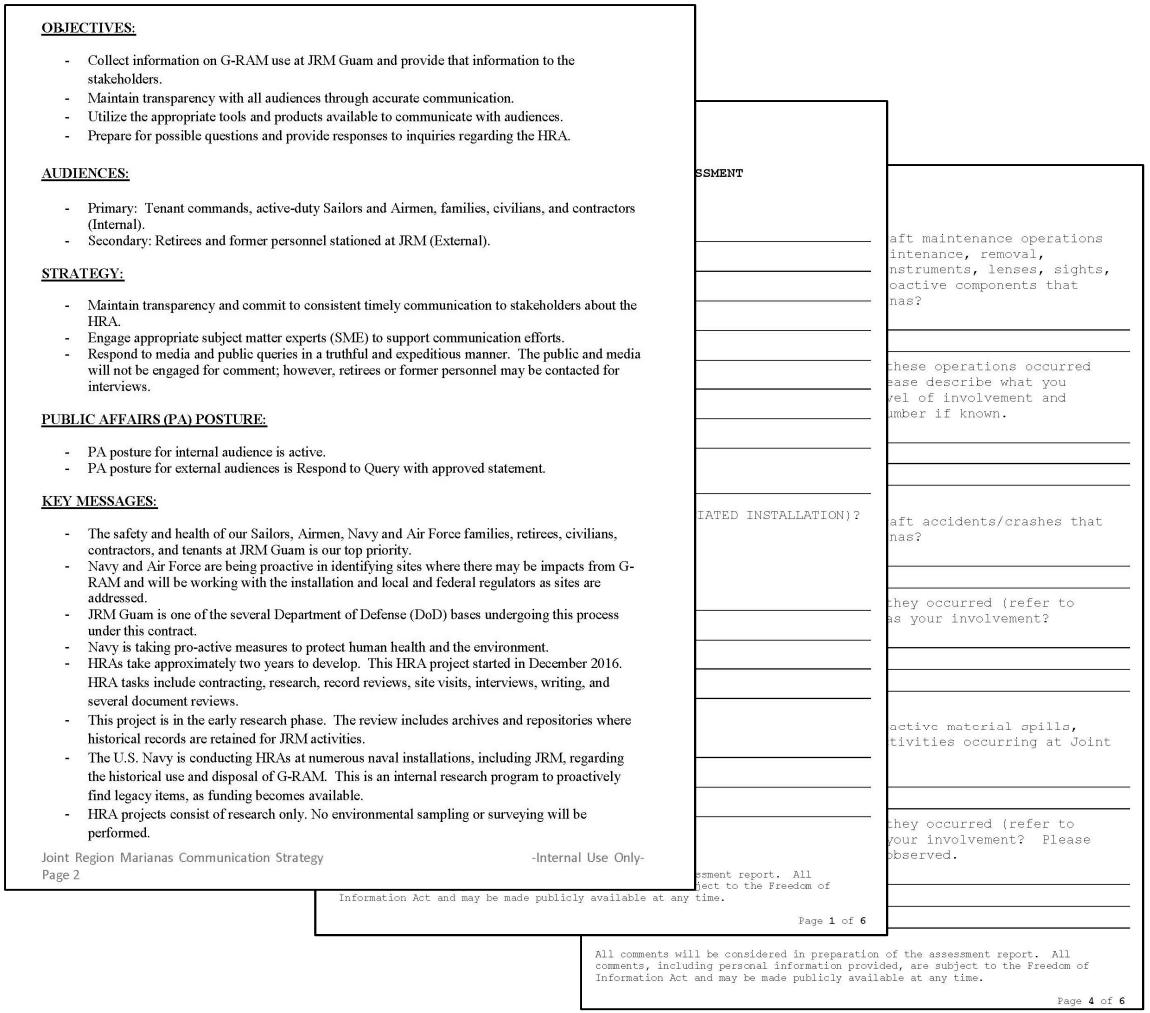
- Report Format
- Standard Language
- Standard Tables
- Standard Descriptions/Maps
- Areas of Interest
- Radionuclides of Concerns
- Grouping Areas

Description of Area	Decision and initial approach Site specific information must be considered
Buildings with **past** use of sealed source(s), leak test required, documented leak tests with no leaks	Non-impacted. Include information in summary table in the non-impacted technical memo and the reason for being determined to be non-impacted. Previous language: AOI and the recommendation would be to maintain sources in accordance with current license or permit requirements. Decommissioning would require evidence of continued leak tests (to the point the sources are removed from the site/area) as required by the license conditions for the sources to document no contamination during time after HRA completed. The recommendation would include managing in accordance with requirement and upon closure or decommission follow required practice. Add another example that would include an area where there may be legacy issues that need to be identified outside of the license.
Buildings with c**urrent** use of sealed source(s), leak test required, documented leak tests with no leaks	AOI and the recommendation would be to that No Further Action is needed except to maintaining sources in accordance with current license or permit requirements. Upon proper permit termination and acceptance by RASO, AOI will be considered non-impacted.
Buildings with sealed but leaking sources	Impacted or previously impacted if remediated with appropriate closure documentation.
Building with un-sealed source currently used with appropriate permits/licenses, no evidence of leakage or damage and appropriate documentation as required by permit/license or SOP	AOI based on the definitions in MARISSM. AOI and the recommendation would be to that No Further Action is needed except maintain sources in accordance with current license or permit requirements. Add language about source being properly closed out in accordance with the permit.
Buildings with magnesium-thorium alloy (MAG THOR)	AOI or impacted if grinding, cutting, shredding, machining, etc. operations took place on the MAG THOR components or there is evidence of the component being in poor condition (oxidation). Non-impacted if none of the previous statements are applicable.
Buildings/areas with welding operations and no records of specific use of thorium welding rods	AOI as a minimum and limit to the area where welding occurred.
Buildings/areas with welding operations and records of specific use of thorium welding rods	Impacted or previously impacted with proper decontamination and surveys
Buildings where records exist such as: recorded spills, standard operating procedures that indicate disposal using drains (and quantities are such that experience has shown typical release to the environment)	Impacted or AOI and the migration pathways would point to a release to the environment from the drains under/outside of the building. Example: instrument shops and laboratories with known disposal of G-RAM to the drains.

RADical Tools

Standard Operating Procedure (SOP) for HRAs – Outreach Package

- Information Fact Sheet
- Public Notice/Ad
- Media Outlets
- Comm Strategy
- Interview Questions



OBJECTIVES:

- Collect information on G-RAM use at JRM Guam and provide that information to the stakeholders.
- Maintain transparency with all audiences through accurate communication.
- Utilize the appropriate tools and products available to communicate with audiences.
- Prepare for possible questions and provide responses to inquiries regarding the HRA.

AUDIENCES:

- Primary: Tenant commands, active-duty Sailors and Airmen, families, civilians, and contractors (Internal).
- Secondary: Retirees and former personnel stationed at JRM (External).

STRATEGY:

- Maintain transparency and commit to consistent timely communication to stakeholders about the HRA.
- Engage appropriate subject matter experts (SME) to support communication efforts.
- Respond to media and public queries in a truthful and expeditious manner. The public and media will not be engaged for comment; however, retirees or former personnel may be contacted for interviews.

PUBLIC AFFAIRS (PA) POSTURE:

- PA posture for internal audience is active.
- PA posture for external audiences is Respond to Query with approved statement.

KEY MESSAGES:

- The safety and health of our Sailors, Airmen, Navy and Air Force families, retirees, civilians, contractors, and tenants at JRM Guam is our top priority.
- Navy and Air Force are being proactive in identifying sites where there may be impacts from G-RAM and will be working with the installation and local and federal regulators as sites are addressed.
- JRM Guam is one of the several Department of Defense (DoD) bases undergoing this process under this contract.
- Navy is taking pro-active measures to protect human health and the environment.
- HRAs take approximately two years to develop. This HRA project started in December 2016. HRA tasks include contracting, research, record reviews, site visits, interviews, writing, and several document reviews.
- This project is in the early research phase. The review includes archives and repositories where historical records are retained for JRM activities.
- The U.S. Navy is conducting HRAs at numerous naval installations, including JRM, regarding the historical use and disposal of G-RAM. This is an internal research program to proactively find legacy items, as funding becomes available.
- HRA projects consist of research only. No environmental sampling or surveying will be performed.

Joint Region Marianas Communication Strategy -Internal Use Only-
Page 2

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Information Act and may be made publicly available at any time.

Page 1 of 6

All comments will be considered in preparation of the assessment report. All comments, including personal information provided, are subject to the Freedom of Information Act and may be made publicly available at any time.

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RADical Tools

Standard Operating Procedure (SOP) for HRAs – Fact Sheet

Joint Region Marianas

Historical Radiological Assess

Information

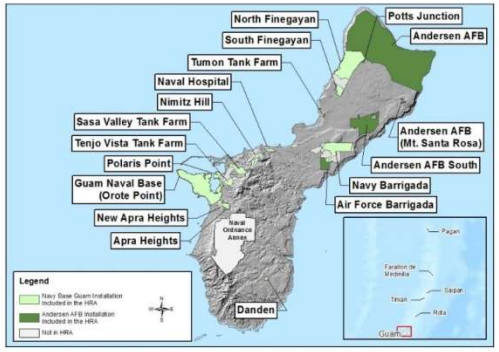
troduction

e Department of the Navy is preparing a storical Radiological Assessment[1] (HRA) for int Region Marianas (JRM) Guam. The purpose of e HRA is to document the historical use of dioactive materials such as radioluminescent vices, including dials, ships' deck markers and uges, lead paint analyzers, static eliminators, etc.

M was established in accordance with ngressional legislation implementing the commendations of the 2005 Base Realignment d Closure Commission (BRAC). The legislation dered the consolidation of facilities which were joining, but separate military installations, into a gle joint base. JRM oversees support services, licies and resources for the combined operational pabilities of Naval Base Guam (NBG), Andersen

Air Force Base (AAFB), and Northern Islands.

The HRA will document current and past operations at NBG (Orote point), Navy North Finegayan, South Finegayan, Nav Nimitz Hill, Tenjo Valley and Sasa V Farms, Polaris Point, New Apra and Ap AAFB, AAFB South, and the Northern Islands (NMI), including: Pagan, F Medinilla (FDM), Saigon, Tinian, and Rot will focus on those operations that adversely affected the installations. focuses on Navy and Air Force operation owned properties. BRAC and Naval Annex properties are not included becau managed under different programs. The accomplished by evaluating informatio from extensive archival research, inter site visits. The HRA will determine if re



Words in **bold text** are defined on Page 3.

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Joint Region Marianas

Historical Radiological Ass

Info

investigations are needed to further assess any area for contamination. The final HRA report will be prepared in accordance with Department of Navy and Federal guidelines and is expected to be completed by December 2018.

Overview of Base History

NBG

NBG was designated as a Naval Operating Base in 1944, and was the largest single element of WWII Fleet support in the Pacific. After WWII, Guam was developed by military construction forces into the largest advanced base in the Western Pacific. Improvements were made to transform Apra Harbor into a permanent naval base. This included construction of ship berthings, ship repair, storage, utilities, and personnel support facilities. Harbor improvements included the initial construction of a breakwater, major dredging and fill operations that created both Inner Apra Harbor and substantial land areas around Inner Apra Harbor, and the construction of quay walls around Inner Apra Harbor.

Sumay Boat Repair Yard was constructed in 1944 to serve the Pacific Fleet. In 1945 the repair units and their functional components were combined into one department called the industrial department, which became a separate command known as Naval Ship Repair Facility, Guam in 1951. Since that time, the facility has worked to provide logistic support including dry-docking, overhaul, repair, alteration, and conversion of naval ships and service craft. The Ship Repair Facility was later closed under the BRAC program.

In 1950 President Harry Truman signed the Organic Act of Guam which made Guam a US Territory. In 1952, the Naval Operating Base was converted to a naval base under the responsibility of Bureau of Ships. Industrial facilities such as Machine Shops, Metal Plating, Paint Sho Optical Shops were operated at

The current mission of NBG is t of the US Pacific Fleet the w NBG, the warfighters serviced a the commands which provid warfighters, and the families o NBG.

AAFB

After U.S Forces recaptured Gua Army Air Force constructed th Field, an aircraft repair and m Northwest Field and North Field Bombers. At the end of the Northwest Fields were closed. designated AAFB in 1949. AAFB a variety of units supporting the the Strategic Air Command in peace.

In 1974, AAFB established a pe to house, feed, and later tra refugees fleeing South Vietna operation continued for 119 115,000 refugees through G mission of AAFB is to be a logi for contingency forces deploy southwest Pacific and Indian Oc

NMIs

After WWII, the NMIs became Territory of the Pacific Islands, United States. The islands conti by the United States military. Sin have been a municipality of the the Northern Mariana Islands. M Tinian, Saipan, FDM, Pagan, military training facilities and/or firing ranges used by the Navy.

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Joint Region Marianas

Historical Radiological Assessment

Information Sheet No. 1
April 2017

Historical Radiological Assessment (HRA)

This HRA will examine and document the extent of current and former activities involving the management, use, and disposal of **radioactive materials** at JRM. The HRA will:

- Document information about radiological operations, investigations, and surveys discovered during searches of historical records and interviews;
- Identify potential, likely, or known sources of radioactive materials, and the areas where these materials might have been used;
- Classify sites as an "**impacted area**", an "**area of interest**" or a "**non-impacted area**";
- Assess the likelihood of any potential residual radioactive material to migrate to other areas or the environment; and,
- Identify sites that need further action, and recommend actions that will work toward site closure.

The HRA will consolidate all of this information in one reference document.

What is Happening with the HRA Now?

Currently the HRA is under way. The HRA Team has already reviewed numerous records and drawings, and will make a site visit to gather additional documents, drawing, and other information.

Definitions

Area of interest – area that cannot be categorized as impacted or non-impacted based on existing information; thus, requiring additional evaluation(s). Following further evaluation, e.g., scoping or characterization surveys, interviews, new information, an area of interest would be designated as impacted or non-impacted.

Historical Radiological Assessment (HRA) – a detailed investigation to collect historical radiological information and data for a particular site and its surroundings where radioactive materials were used, stored, or disposed.

Impacted Area – area either known to contain residual radioactive material based on radiological surveys or other documented evidence or suspected of containing residual radioactive material based on historical information.

Non-impacted Area – area where there is no reasonable possibility for residual radioactive material based on site history, process knowledge, or previous survey information.

Radiological investigation – a systematic examination of an area to determine if radioactive materials are present and, if so, at what levels.

Radioactive material – a substance that contains or emits radiation. Radioactive materials and radiation occur in nature. These materials are used by the military and private industries and are present in common household items. Common items that contain radioactive materials are smoke detectors, radioluminescent devices including dials, ships' deck markers, and gauges, lead paint analyzers, static eliminators, non-electrically powered exit signs, and biological and chemical agent detectors.

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RADical Tools

Notification Protocol during HRA Process

- Protocol for communication of areas with immediate concerns
- Identify sensitive areas
    - MILCON Project
    - Facility Demolishment, Modification or Maintenance
    - Remediation efforts planned or underway

- Communications with RASO, LANT and appropriate facility personnel
    - Preliminary characterization
    - Maps
    - History and any Conceptual Site Model (CSM) Information

- Allows appropriate base personnel to manage with RASO guidance

RADical Tools

Characterizing Areas of Interest (AOIs) in the HRA

- Summary and table for each AOI
- Identify radionuclides for typical operations
- List contaminated media
- Identify any potential migration pathways
- Consistent conclusions and recommendations across installations
- Summary of characterization
  - Classification (Impacted, AOI, Previously Impacted)
  - Impact Potential (Likely, Unlikely, Unknown)

Ref: Oak Ridge Associated Universities, January 2009. Picture of Thorium Containing Welding Rod.

Classification of Areas - Definitions

Area	Definition
Impacted	Known to contain residual radioactive material based on radiological surveys or other documented evidence or suspected of containing residual radioactive material based on historical information
Impacted Area with Land Use Controls (LUCs)	Either known to contain or suspected of containing residual radioactive that is being adequately managed with LUCs
Previously Impacted	Area that was impacted, remediated, surveyed, and adequate documentation exists supporting the area's release for unrestricted use. The area could also be categorized as a non-impacted, but is given this specific designation so the area's historical past in not overlooked
Areas of Interest (AOI)	Cannot be categorized as impacted or non-impacted based on existing information. Following further evaluation(s), e.g., discovering new or additional information, performing scoping or characterization surveys, conducting interviews, an area of interest would be designated as impacted or non-impacted
Non-impacted	No reasonable possibility for residual radioactive material based on site history, process knowledge, or survey information

Classification of Areas

Summary Table for Building 157, Rooms 102, 103, 104, 105, and 106									
Classification:	Impacted	Impacted with LUCs	Previously Impacted	AOI					
	✓								
Impact Potential:	Known-Restricted Access	Known-Continued Access	Likely	Unlikely	Unknown				
				✓					
Justification:	Building 157 has been used to manage radioactive materials in accordance with NRMP No 19-61533-E1NP [CA086, Pages 5 and 16 of 33] and NRMP No. 19-0167-E1NP [CA052, Page 6 of 265] from 1996 through June 2017 [CA052, Page 6, 192 of 265] [CA086, Pages 1, 5, 16, 23, and 27 of 33]. Building 157 had a TLD reader room, gamma ranges, ion accelerators areas, burn labs, and lab/storage [CA077, Pages 17 and 18 of 77]. Instrumentation is located within Exposure Room 104 (Radiation Range) of Building 157 [CA051, Pages 1-6 of 6] [CA052, Page 82 of 265] [CA072, Page 1 of 1].								
References:	CA016, CA051, CA052, CA053, CA054, CA055, CA056, CA057, CA072, CA073, CA074, CA077, CA083, CA085, CA086, CA092, CA093, CA094, CA095, CA097, CA098, CA099, CA100, CA102, CA114, CA119, CA120, CA195, CA208, CA214, CA219, CA224, CA233, CA240, CA241, CA242, CA273, CA274, CA275, CA277, CA278								
Current Land Use:	Industrial; Materials Research Laboratory; no known radiological LUCs								
Sources of Contamination:	Potentially leaking sources								
ROPCs:	Americium-241, Barium-133, Cadmium-109, Californium-252, Carbon-14, Cesium-137, Chlorine-36, Cobalt-60, Gadolinium-148, Hydrogen-2, Hydrogen-3, Iron-55, Krypton-85, Plutonium-238, Plutonium-239, Radium-226, Sodium-22, Strontium-90, Technicium-99, Thorium-232, Uranium-235, and Uranium-238								
Potentially Contaminated Media (High/Moderate/ Low/not applicable):	Surface Soil	Subsurface Soil	Ground-water	Surface Water	Sediment	Air	Buildings	Drainage Systems	Debris
	n/a	n/a	n/a	n/a	n/a	n/a	Low	n/a	n/a
Preferential Migration Pathways (High/Moderate/ Low):	Low: ROPCs potentially present on building surfaces in Rooms 102, 103, 104, 105, and 106.. Drainage systems would only be included as a potential pathway if further investigation finds ROPCs present within the building structure or other evidence is discovered that the drainage system should be addressed.								
Recommended Action(s):	No further investigation at this time for Rooms 102, 103, 104, 105, and 106; continue to manage Building 157 Materials Research Laboratory in accordance with the NRMP. ;								

RADical Tools

Post-HRA Identification of Responsible Program

- Environmental Restoration?
- Installation (Public Works & Safety)?
- Programs are **not** identified in HRA – **Stakeholder Decision** during HRA review meeting
- AOI Summary including Responsible Program documented by LANT
- Note: Qualitative tool based on the information in the HRA & not hazard ranking system)
- Potential RAD Areas added to GRX Viewer
  - Provide GIS shapefiles to NAVFAC NIRIS group under ER,N
  - Provide other GIS shapefiles to GeoReadiness Coordinators (GRC)

RADical Tools

Post-HRA Identification of Responsible Program

Preliminary Ranking Areas of Interest (AOIs) Managed by ER,N Program Installation		
Further Action: Impacted or Likely Impacted	4	RED
Further Action: Unlikely or Unknown	3	ORANGE
Further Action (i.e. Demolished Buildings or under active permit): Unlikely & Low Risk – Potential LUCs/dig permit (without initial investigation)	2	BLUE
No Further Action	2	GREEN

RADical Tools

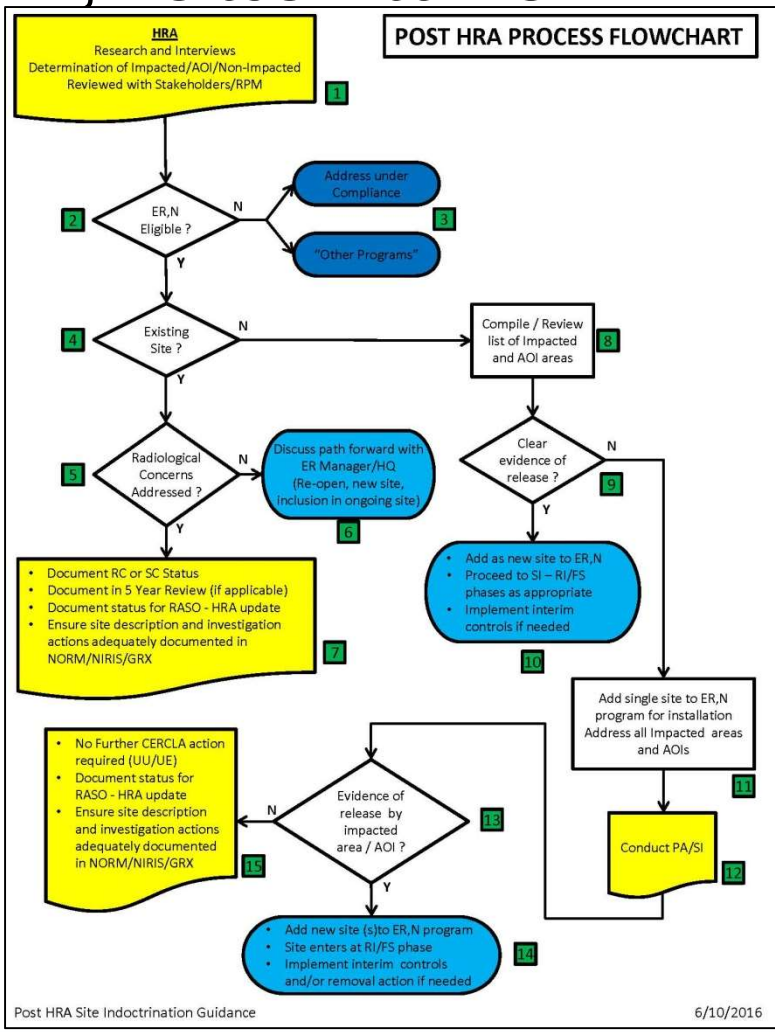
Post-HRA Identification of Responsible Program

HRA Recommendations for Installation							
#	Area #/ Building #	Area Name/ Description	Classification	Recommended Action	Recommended Program[1]	Page # from HRA	GRX Designation
1	1487	Magazine (Demolished)	Impacted	Evaluate structure with respect to ROPCs	Environmental Restoration	138 & 286	Potential Rad Site
2	SWMU 04	McCormish Gorge	Impacted	Evaluate AOI with respect to ROPCs	Environmental Restoration	141	Potential Rad Site
3	SWMU 14	Sanitary Landfill/Lithium Battery Burial	Impacted	Evaluate AOI with respect to ROPCs	Environmental Restoration	145	Potential Rad Site
4	Part of SWMU 21	Defense Reutilization Marketing Office (DRMO) Storage Lot	Impacted	Evaluate AOI with respect to ROPCs	Environmental Restoration	155	Potential Rad Site
5	SWMU 24	Sludge Drying Beds A	Impacted	Evaluate AOI with respect to ROPCs	Environmental Restoration	159	Potential Rad Site
6	SWMU 24	Sludge Drying Beds B	Impacted	Evaluate AOI with respect to ROPCs	Environmental Restoration	159	Potential Rad Site
7	12	Dispensary/ Emergency Radio Communication Center (demolished)	Previously Impacted	No further action	Environmental Restoration	170	Potential Rad Site
8	SWMU 01	Mustad Gas Burial Grounds	Previously Impacted	No further action	Environmental Restoration	178	Potential Rad Site
9	SWMU 02	Dye Burial Grounds	AOI	Evaluate AOI with respect to ROPCs	Environmental Restoration	208	Potential Rad Site
10	SWMU 11 Bldg 225	Former Inert Storage Building 225 (Demolished)	AOI	Evaluate AOI with respect to ROPCs	Environmental Restoration	237 & 286	Potential Rad Site
11	2980	Test Explosive Center (Demolished)	AOI	Evaluate AOI with respect to ROPCs	Environmental Restoration	286	Potential Rad Site

Now for the Real RAD Times

Post-HRA Process of adding new ER,N sites into NORM

- Post HRA Site Indoctrination Guidance (2016)
- AOIs Identified by the HRA
  - HRA provides starting point
  - Next steps:
    - Enter as one site into NORM
    - Complete PA/SI
- RPM or program manager identifies area
  - Files and history
  - Known operations legacy and current
  - Other radiological investigations
  - Permits or licenses



Other RADical Tools

RASO Environmental Protection Manager (EPM) SOP

- Effort managed by LANT
- Intended to provide a guide for RASO EPMs
- Ultimately will be used to develop tool for NAVFAC RPMs
- EPM SOP Sections:
  - Roles and responsibilities
  - Stakeholder/Regulator Risk Comm
  - DQO Process
  - Release Criteria/Dose Modeling
  - Background/Reference Areas
  - Data Interpretation
  - HRAs
  - Pre-Contract Work
  - Contracting
  - Site Work & Survey Planning
  - Survey Oversight
  - Report Review

Other RADical Tools

Work Plans and Sampling and Analysis Plan Tools

- RAD WP/SAP Checklists
- Scope of Work Template for PA/SI
- Scope of Work Template for G-RAM Surveys

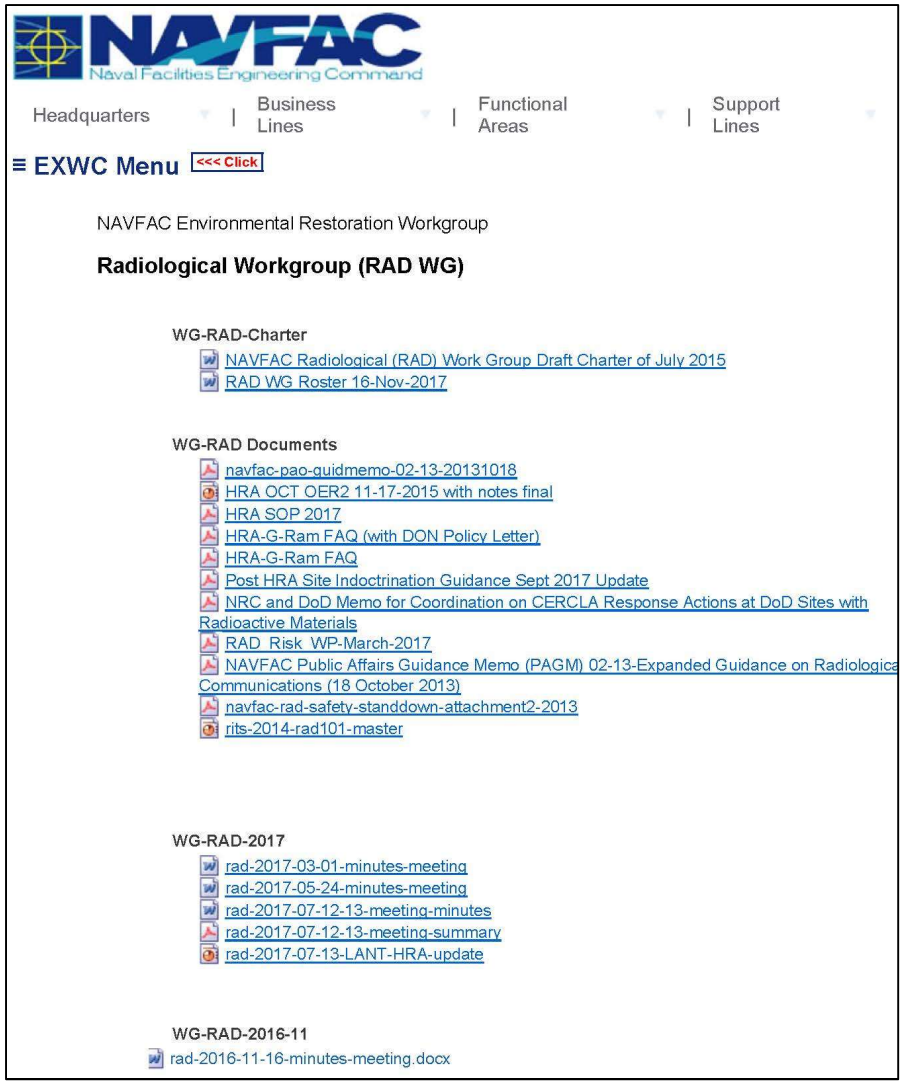
[Ref: Oak Ridge Associated Universities, July 2010. Picture of Electron Tubes]

[Ref: Oak Ridge Associated Universities, July 2010. Picture of Electron Tubes]

Other RADical Tools

Radiological Workgroup (RAD WG) Tools

- Quality Assurance (QA) Oversight for Scoping Surveys in the Field
- Conceptual Site Model (CSM) & Background Study
- PA/SI Scope of Work Templates
- Work Plans and Sampling and Analysis Plan (SAP) Tools
- Radiological ARARs
- Post HRA Communication Plans
- RAD WG NAVFAC HUB SITE



Knowledge Check

- **All Impacted Areas identified in the HRA will be rolled into the ER,N Program**
  - True or False?
- **The HRA identifies the program will further investigate AOIs (ER,N program, Compliance, Safety, etc.)**
  - True or False?
- **Post HRA Indoctrination Guidance (2016) has been developed by HQ to help RPMs manage potential radiological sites within the ER,N Program**
  - True or False?

Summary

- Working to develop tools to help NAVFAC RPMs with RAD Projects
  - Standardized HRAs with consistency across sites
  - Creating templates, tools and checklists
  - Next Steps for RPM
- RASO completing EPM SOP = Service Oriented
- Radiological Workgroup Representatives in your FEC

Agency	Name	Role
Leadership		
NAVFAC SE	Marshall Knight	NAVFAC EM Link
NAVFAC HQ	Steve Hurff	HQ POC
Members and Alternates		
NAVFAC EXWC	Dan Goodman	Member
NAVFAC LANT	Jan Nielsen	Member
NAVFAC LANT	Amy VanDercook	Member
NAVFAC LANT	Paul Landin	Member
NAVFAC BRAC	Guy Chammas	Member
NAVFAC BRAC	Todd Bober	Alternate
NAVFAC MIDLANT	Linda Cole	Member
NAVFAC NW	Chris Generous	Member
NAVFAC PAC	Richard Hosokawa	Member
NAVFAC SW	Melanie Kito	Member
NAVFAC WASH	Joe Rail	Member
NAVSEADET RASO	Zach Edwards	Alternate
NAVSEADET RASO	Patrick Owens	SME - RAD
NAVSEADET RASO	Matthew Slack	SME - RAD
NAVSEADET RASO	Allen Stambaugh	SME - RAD
NAVSEADET RASO	Eric Lieberman	SME - RAD

Contacts and Questions

Points of Contact – NAVFAC ATLANTIC RAD TEAM
NAVFAC ATLANTIC: AMY VANDERCOOK, P.G. – amy.l.vandercook@navy.mil
NAVFAC ATLANTIC: PAUL LANDIN, P.E. – paul.landin@navy.mil
NAVFAC ATLANTIC: JAN NIELSEN – janice.nielsen@navy.mil
Questions ?